ABSTRACTS

A Case-Control Study of Childhood and Adolescent Household Passive Smoking and the Risk of Female Lung Cancer. F.L. Wang*, E.J. Love (The University of Calgary, Calgary, Alberta, CANADA, T2N 4N1), X.D. Dai (Heilongjiang Institute for Cancer Research, Harbin, China).

To evaluate the risk of female lung cancer from passive smoking (PS), a 1:1 matched case-control study was conducted in Harbin, China. One hundred and fourteen females with primary lung cancer, aged 30 to 69 years, and their hospital-based controls were interviewed using a standard questionnaire. The controls were patients without cancer, from the same hospital as the cases and matched on age (± 5 years), residential area and lifetime smoking habits. Information on PS was collected by each residence for each of the following periods: 0-6, 7-14, 15-22, 23-30 and 31-69 years.

The risk of lung cancer was increased for household exposure under the age of 14 years to maternal smoking (odds ratio, OR=2.70, 95%CI=1.49-4.88), but not for exposure to paternal smoking (OR=1.40, 95%CI=0.79-2.50). The risk was highest in those exposed under the age of seven (OR=3.46, 95%CI=1.80-6.63) and was also significant at ages 7-14 (OR=3.06, 95%CI=1.62-5.57) and 15-22 (OR=3.10, 95%CI=1.52-6.31). The OR increased with the amount of passive smoking (P<0.001). These findings suggest that PS, particularly during childhood, increases the risk of female lung cancer and that the assessment of PS should be done by different periods of exposure.

301

A Case-Control Study of Idiopathic Pulmonary Fibrosis (IPF). K.Baumgartner*, J. Samet, C.Stidley and Collaborating Centers (University of New Mexico, Albuquerque, NM 87131). This is a multicenter (16 centers) case-control study that examines potential risk factors for IPF, a progressive disease that causes pulmonary interstitial fibrosis. The study currently includes 167 cases and 261 controls: 59% of cases are male and 85% are non-Hispanic white. Median age for cases is 61.5 years. Two controls per case are identified through random digit dialing and matched on gender, age and geographic location. Telephone interviews are conducted to collect information on smoking, occupational exposures, environmental exposures and host factors. Clinical data include pulmonary function tests, X-ray reports and lung biopsy reports. Most referred cases have been interviewed (2% refusal, 5% deceased); refusal rate for controls has been low (9%). Conditional logistic regression was performed on 150 matched sets. Univariate analyses were used to select variables for inclusion in multivariate models. After adjustment for residual age effects in the multivariate model, potential causal factors with odds ratios (95 percent confidence intervals) are: reported occupational asbestos exposure 2.5 (0.95-6.49); reported occupational exposure to vegetable/animal dust 2.7 (0.86-8.27); farming activities 3.0 (1.45-6.10); work in a chemical or petrochemical plant 4.5 (1.23-16.59); cigarette smoking 1.8 (1.05-3.17); and occurrence of pneumonia at least once 1.6 (0.98-2.59). These findings suggest that some cases of IPF may be caused by environmental factors.

302

Exposure to biogenic silica fibers and respiratory health in Hawaii sugarcane workers. T. Sinks*, R. Hartle, M. Boehiger, D. Mannino, J. Fernback, M. Hawkins, C. Grimes, K. Watkins, P. Dill, B. Anderson. (NIOSH, Centers for Disease Control and Prevention, Cincinnati, OH 45226). Tel: (404) 488-7350

Scientists have theorized that naturally occurring biogenic silica fibers (BSF) could affec workers health in a manner similar to other respirable fibers, such as asbestos. The authors conducted a cross-sectional environmental and medical survey of 355 male Hawaiian sugarcane workers to test this hypothesis. More than 120 personal breathing zone samples were collected to develop a job-exposure matrix and to categorize workers by BSF exposure. Respiratory health data included the prevalence of respiratory symptoms, pulmonary function, and chest radiograph results. The prevalences of respiratory symptoms, chest radiograph findings, and pulmonary function relate conditions did not differ by BSF-exposure category Cigarette smoking was associated with respiratory symptoms and pulmonary obstruction. Fifteen worker had pleural thickening or pleural plaques and 3 of these workers were exposed to BSF for more than te years. BSF exposure does not appear to have influenced the respiratory health of the sugarcane workers studied by the authors.

KEYWORDS: occupation, sugarcane, fibers, pulmonary

303

Protection of the Lung From Smoking Damage by Eating Fish. D.S. Sharp*, B. Rodriguez, E. Shahar, C. Burchfiel, L. Hwang, J.D. Curb (National Heart, Lung and Blood Institute, Honolulu, HI)

High fish consumption is characteristic of the Japanese-American men of the Honolulu Heart Program (HHP). Analyses of data from the ARIC study suggest that a high fish intake protects the lung against smoking damage. Measurements of forced expiratory volume in 1 second (FEV,) and smoking status in the HHP cohort allow a cross-sectional test of this hypothesis. Among 8006 men 45-68 yrs old in 1965-68, 6346 had acceptable spirograms. Within current smokers, 1545 men consumed fish less than twice a week and 1264 ate twice a week or more. Controlling for cigarettes/day, age, height and daily calorie intake, separate regression models revealed adjusted regression coefficients of -10.1 ml FEV, per year of smoking (95% Confidence Interval: -14, -7) at low levels of fish intake, and -4.4 (-8, -0.6) at high levels. The coefficients were significantly different (p = 0.003). These differences reflect a predicted FEV, 108 ml higher in the high fish group at 45 years of smoking, but no difference in FEV, at 25 years. Similar analyses for cig/day produced significantly different coefficients (p = 0.047) of -4.2 (-6, -2) ml FEV, per cig/day for low fish intake and -6.2 (-8, -4) for high intake. These contrasting coefficients appear to contradict the fish protection model, with a larger decrement in FEV, per cig/day in the high fish intake group. However, the predicted FEV, at 10 cig/day is 53 ml higher in the high fish group, with no difference in FEV, noted between groups at 40 cig/day. This feature actually supports the hypothesis, suggesting the protective role of fish is "saturated" at higher "doses" of cigarette smoking. These findings support the hypothesis that frequently eating fish partially protects the lung from smoking damage but that such effects may be lost with heavy smoking.

304